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EXAMINER	
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ART UNIT	**PAPER NUMBER**
3663	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/710,513	VARSAMIS ET AL.
	Examiner	Art Unit
	Scott A. Hughes	3663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 9/23/2005.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 20-94 is/are pending in the application.

4a) Of the above claim(s) 75-94 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 20-74 is/are rejected.

7)☒ Claim(s) 22-24 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 16 July 2004 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 7/16/2004.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group II in the reply filed on 9/23/2005 is acknowledged. The traversal is on the ground(s) that the amended claims of Group III would read on the separate use of the apparatus in land surveys that was cited for a reason for Group II being distinct from Group III. This is not found persuasive because Group II and Group III are not linked. There is no linking claim present. Without a proper linking claim, Group II and Group III are separable. Separate classification and reasoning need only be applied. In the instant case, the examiner has shown separate classification. The process could be completed by a completely different apparatus, such as a sensor array wherein the telemetry and control module are not housed together. The apparatus as claimed can also have separate uses other than in conducting a survey, such as monitoring equipment used in a borehole.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

Claims 22-24 are objected to because of the following informalities:

Claims 22-24 recite the limitations "first pod data" and "second pod data" and claim 20, from which 22-24 depend, recites only "first data" and "second data." It is unclear whether the "first data" and "second data" are the same as the "first pod data" and "second pod data." Consistent language for the same limitation is requested in the claim language.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 20-74 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 20-74 recite the limitation that the structure of the claims is "designed and arranged to" perform specified functions. The term "designed to" is unclear because the specification and the drawings to not show all of the limitations of the specific design used in the invention which enables these functions to be performed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 20-21, 25, 35-36, 38-51, 53-55, and 57-59 are rejected under 35 U.S.C. 102(b) as being anticipated by Zimmer.

With regard to claim 20, Zimmer discloses a sensor array 15 (Fig. 1). Zimmer discloses a telemetry and control module 10, and a plurality of sensor pods 15 coupled

to the telemetry and control module (Column 2, Lines 5-55; Column 3, Lines 8-44; Column 4, Lines 1-44). Zimmer discloses that each of the plurality of sensors pods 15 are characterized by having a sensor 36,37 therein coupled to a memory 31, having a first interface 30 coupled to the memory, having a second interface 33 coupled to the memory, and being designed and arranged to transfer first data from the memory to the first interface and second data from the second interface to the memory (Column 2, Lines 5-55; Column 4, Lines 23-65; Column 6, Lines 1-33). Zimmer discloses that the telemetry unit (first interface) can transfer data from the memory to the first interface and on to the central recording surface unit. Zimmer discloses that the second interface (ADC, computer) transfer data to the memory from the sensors. Since the ADC and computer in the tool transfer data to the memory, they are read as being the second interface that is arranged to transfer data to the memory from a second interface. Zimmer discloses that the telemetry and control module is coupled to the first interface of a first of the plurality of sensor pods (Fig. 1). Zimmer shows that the telemetry and control module 10 is coupled to the first interface 30 of the first of the plurality of sensor pods by cable 27. Zimmer discloses that the second interface of the first of the plurality of sensor pods is coupled to the first interface of a second of the plurality of sensor pods (Fig. 1). Zimmer shows that the second interface of a first sensor pod 15 is coupled to the first interface 30 of the next pod by cable 27. Zimmer discloses that data is transferred from one pod to the next through the telemetry cable 27 until it reaches the surface telemetry receiver (Columns 2, 3, 6).

With regard to claim 21, Zimmer discloses that each of the plurality of sensor pods is designed and arranged to simultaneously transfer first data from the memory to the first interface and second data from the second interface to the memory (Column 2; Column 7, Line 15 to Column 8, Line 50; Column 10).

With regard to claim 25, Zimmer discloses that the plurality includes the first of the plurality, a last of the plurality and at least one inner of the plurality, each of the at least one inner of the plurality has the first interface coupled to the second interface of a first adjacent of the plurality and the second interface coupled to a second adjacent of the plurality, the first interface of the last of the plurality is coupled to the second interface of one of the at least one inner of the plurality, and the first interface of the first of the plurality is coupled to the telemetry and control module and the second interface of the first of the plurality is coupled to the first interface of one of the at least one inner of the plurality (Fig. 1; abstract; Column 2, Lines 5-55; Column 6, Lines 1-33; Columns 7-8). Zimmer discloses M recording stations 15 (sensor pods) connected together by a telemetry cable 27. Each recording station has a first and second interface, and also has other interfaces that allow for the connection of the telemetry cable and the transfer of data along the telemetry cable from one station to the next. This is read as having a first, inner, and last of a plurality of sensor pods. The linking of the telemetry line 27 from one station to the next for the transfer of data is read as the coupled interfaces of each of the plurality.

With regard to claim 35, Zimmer discloses that communication between the plurality of sensor pods uses a communications protocol, and communication between

the telemetry and control module and the first of the plurality uses a communications protocol (Column 6, Column 7, Line 1 to Column 8, Line 50).

With regard to claim 36, Zimmer discloses that the communications protocol is a serial communications protocol (Column 6, Column 7, Line 1 to Column 8, Line 50).

With regard to claim 38, Zimmer discloses that each of the plurality further comprises, a clamping mechanism 28 designed and arranged to releasably clamp the sensor pod to a borehole wall (Column 2, Lines 38-55; Column 4, Lines 35-45).

With regard to claim 39, Zimmer discloses that each of the plurality is further characterized by, the clamping mechanism being controlled by the sensor pod in response to a signal received at the first interface (Column 2, Lines 38-55; Column 4, Lines 35-45; Column 6, Lines 1-53).

With regard to claim 40, Zimmer discloses that the signal originates from the telemetry and control module (Column 6, Lines 1-53). Zimmer discloses that the telemetry and control module provides a prompt signal, and that the device responds to this prompt signal to clamp and begin taking data.

With regard to claim 41, Zimmer does not disclose a surface controller coupled to the telemetry and control module, wherein the signal originates from the surface controller. Zimmer does disclose that the telemetry cable 16 goes from the telemetry control unit to surface equipment. It would have been obvious to have a surface controller coupled to the telemetry cable 16 to send the signals to the downhole equipment in order to have a central computer than can be used by an operator to control the downhole equipment and data transfer and make adjustments as needed.

With regard to claim 42, Zimmer discloses that the signal originates from the second interface of an adjacent one of the plurality of sensor pods interface (Column 2, Lines 38-55; Column 4, Lines 35-45; Column 6, Lines 1-53). Zimmer discloses that the signals go from the first pod to the last pod (Fig. 1), and therefore the signal would travel from one device to the interface of the next.

With regard to claim 43, Zimmer discloses that each of the plurality further comprises, a processor 32 coupled to the memory 31, the first interface 30 and the second interface 33, the processor designed and arranged to interpret signals received at the first interface and control the sensor pod (Column 4, Line 45 to Column 6, Line 52).

With regard to claim 44, Zimmer discloses that the sensor is a seismic sensor 36, 37 (Column 4, Line 45 to Column 5, Line 5).

With regard to claim 45, Zimmer discloses a plurality of cables 27, wherein each of the plurality of sensor pods 15 has upper and lower ends and characterized by being designed and arranged to be repeatably coupled and uncoupled to a first and second of the plurality of cables at both the upper and lower ends, and the plurality of sensor pods are removably coupled together upper end to lower end by the plurality of cables to form a string, with a first end of the string of sensor pods removably coupled to the telemetry and control module 10 with one 16 of the plurality of cables (Fig. 1) (Column 4, Lines 23-40; Column 7, Lines 15-40).

With regard to claim 46, Zimmer discloses that each of the plurality of sensor pods is characterized by, having a processor 32 designed and arranged to

communicate with the telemetry and control module 10 and with other sensor pods and designed to store an identification (Column 2, Lines 5-55; Column 4, Lines 1-44; Column 5, Lines 15-27). Zimmer discloses that each processor contains information about the location of the station, and this is read as its identification since the location would correspond to the device in the data.

With regard to claim 47, Zimmer discloses that the telemetry and control module can query each of the plurality of sensor pods, and each of the plurality of sensor pods is designed and arranged to answer a query (Column 4; Column 5, Lines 15-27, Column 6).

With regard to claim 48, Zimmer discloses that the telemetry and control module harmonizes with the plurality of sensor pods to establish a unique identification for each of the plurality of sensor pods, and the telemetry and control module registers the position in the string of each of the sensor pods relative to the plurality of sensor pods (Column 4, Lines 1-40; Column 5, Lines 15-27, Column 6). Zimmer discloses that each processor contains information about the location of the station, and this is read as its identification since the location would be interpreted by the control module 10 when taking data from each station.

With regard to claim 49, Zimmer discloses using a particular identification, the telemetry and control module queries a specific one of the plurality of sensor pods, and the specific one of the plurality of sensor pods answers the telemetry and control module (Column 5, Lines 15-27, Column 6).

With regard to claim 50, Zimmer discloses that the telemetry and control module queries about a status of a sensor (Column 2; Column 4; Column 5, Lines 15-27). Zimmer discloses that information about each sensor is part of the data, and that the main telemetry unit interrogates the sensor stations 15 for their data. Therefore, the main telemetry and control module queries about the status of the sensors.

With regard to claim 51, Zimmer discloses that the telemetry and control module queries about a status of a memory (Column 2; Column 5, Lines 15-27).

With regard to claim 53, Zimmer discloses that the telemetry and control module queries about a status of a clamping mechanism (Column 2, Lines 15-55; Column 4; Column 6, Lines 34-62). Zimmer discloses that information about each clamping mechanism is part of the data, and that the main telemetry unit interrogates the sensor stations 15 for their data. Therefore, the main telemetry and control module queries about the status of the clamping mechanisms.

With regard to claim 54, Zimmer discloses that using a particular identification, the telemetry and control module commands a function of a specific one of the plurality of sensor pods, and the specific one of the plurality of sensor pods performs the function (Column 2; Column 5, Lines 15-27).

With regard to claim 55, Zimmer discloses that the telemetry and control module commands to manipulate a clamping mechanism (Column 2, Column 4; Column 6, Lines 34-62).

With regard to claim 57, Zimmer discloses that the telemetry and control module sends commands to control a sensor (Column 2, Lines 15-26; Column 4; Column 5, Lines 15-27).

With regard to claim 58, Zimmer discloses that the telemetry and control module simultaneously commands each of the plurality of sensor pods to record data (Column 5, Lines 15-27; Column 7, Line 15 to Column 8, Line 15).

With regard to claim 59, Zimmer discloses that the telemetry and control module nearly simultaneously commands each of the plurality of sensor pods to transmit data (Column 5, Lines 15-27; Column 7, Line 15 to Column 8, Line 15).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 22-24, 26-34 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmerman as applied to claim 20 above, and further in view of Laborde.

With regard to claim 22, Zimmer discloses that first pod data is produced by the sensor of the first of the plurality and transferred to the memory of the first of the plurality. Zimmer discloses that second pod data is produced by the sensor of the

second of the plurality and transferred to the memory of the second of the plurality. Zimmer discloses that first pod data is transferred from the memory of the first of the plurality through the first interface of the first of the plurality to the telemetry and control module (Column 2, Lines 5-55; Column 4, Lines 23-65; Column 6, Lines 1-33; Column 7, Line 15 to Column 8, Line 15). Zimmer does not disclose that second pod data is transferred from the memory of the second of the plurality through the first interface of the second of the plurality and through the second interface of the first of the plurality to the memory of the first of the plurality. Zimmer discloses that the second pod data is transferred through the telemetry unit of the second pod and through the first pod to the main telemetry and control module (Columns 6-7). Zimmer does not disclose that the data from the second pod is transferred to the memory of the first device before being transferred to the telemetry and control module. Laborde discloses that data from sensors in a borehole is transferred from node to node (Figs. 2A,2B,3,4) (Columns 3-4). It would have been obvious to modify Zimmer to transfer data from node to node (sensor device to sensor device 15) as taught by Laborde and store the data in the memory of each device as it passed up the to the telemetry and control module in order to limit the amount of data being sent over the bandwidth of the transmission cable at one time and also to store the data in case of a communication failure along the line as the data is being transferred.

The statements related to the pod data and transfer of the data are essentially method limitations. Thus, these claims as well as other statements of intended use do

not serve to patentably distinguish the claimed structure over that of the reference. See In re Pearson, 181 USPQ 641; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re Casey, 512 USPQ 235; In re Otto, 136 USPQ 458; Ex parte Masham, 2 USPQ 2nd 1647.

See MPEP § 2114 which states:

> A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ 2nd 1647
>
> Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions. In re Danly, 120 USPQ 528, 531.
>
> Apparatus claims cover what a device is not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

As set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

With regard to claim 23, Zimmer discloses that first pod data is transferred from the memory of the first of the plurality through the first interface of the first of the plurality to the telemetry and control module (abstract; Column 2; Fig. 1). Zimmer does not disclose that simultaneously second pod data is transferred from the memory of the second of the plurality through the first interface of the second of the plurality and through the second interface of the first of the plurality to the memory of the first of the plurality. Zimmer discloses that second pod data is stored in the memory of the second of the plurality and that it is transferred along to the telemetry and control module 10, but does not disclose that it first is transferred to the memory of the first pod. Laborde discloses that data from sensors in a borehole is transferred from node to node (Figs.

2A,2B,3,4) (Columns 3-4). It would have been obvious to modify Zimmer to transfer data from node to node (sensor device to sensor device 15) as taught by Laborde and store the data in the memory of each device as it passed up the to the telemetry and control module in order to limit the amount of data being sent over the bandwidth of the transmission cable at one time and also to store the data in case of a communication failure along the line as the data is being transferred.

With regard to claim 24, Zimmer discloses that the second pod data is transferred from the memory of the first of the plurality through the first interface of the first of the plurality to the telemetry and control module (abstract, Column 2, Lines 5-55; Columns 7-8).

With regard to claim 26, Zimmer discloses that last pod data is produced by the seismic sensor of the last of the plurality and transferred to the memory of the last of the plurality, the last pod data is transferred from the memory of the last of the plurality to the telemetry and control module via each of the at least one inner of the plurality, and via the first of the plurality (Fig. 1; abstract; Column 2, Lines 5-55; Column 6, Lines 1-33; Columns 7-8). Zimmer discloses M recording stations 15 (sensor pods) connected together by a telemetry cable 27. Each recording station has a first and second interface, and also has other interfaces that allow for the connection of the telemetry cable and the transfer of data along the telemetry cable from one station to the next. Zimmer does not disclose that the data is temporarily stored in the memory of each of the inner pods of the plurality nor that the data is temporarily stored in the memory of the first of the plurality before being sent to the telemetry and control module 10.

Laborde discloses that data from sensors in a borehole is transferred from node to node (Figs. 2A,2B,3,4) (Columns 3-4). It would have been obvious to modify Zimmer to transfer data from node to node (sensor device to sensor device 15) as taught by Laborde and store the data in the memory of each device as it passed up the to the telemetry and control module in order to limit the amount of data being sent over the bandwidth of the transmission cable at one time and also to store the data in case of a communication failure along the line as the data is being transferred.

With regard to claim 27, Zimmer does not disclose that each of the plurality is further characterized by a communications bypass coupled between the first interface and the second interface, the communications bypass having a switch element having a first state, which enables the bypass, and a second state which disables the bypass. Laborde discloses bypass switches in nodes between first and second interfaces (Fig. 4) (Column 4, Line 40 to Column 5, Line 5; Column 6). It would have been obvious to modify Zimmer to include bypass switches as taught by Laborde in order to be able to bypass a device whose communication channels have failed so that data can still be transferred to the surface.

With regard to claim 28, Laborde discloses that each of the plurality is further characterized by the switch element being controlled by the sensor pod in response to a signal received at the first interface (Column 4, Line 40 to Column 6, Line 57).

With regard to claim 29, Laborde discloses that the signal originates from a telemetry and control module 37,362 (Column 5).

With regard to claim 30, Laborde discloses a surface controller coupled to the telemetry and control module, wherein the signal originates from the surface controller 300 (Columns 5-6). It would have been obvious to modify Zimmer to include the surface controller coupled to the telemetry and control module as taught by Laborde in order to control operations of switch elements to bypass devices that have failed.

With regard to claim 31, Laborde discloses that the signal originates from the second interface of an adjacent one of the plurality of sensor pods (Column 4, Line 40 to Column 6). Laborde discloses that the devices monitor the channels of the devices above and below them, and can send a signal to operate the switches based on this monitoring. The monitoring would be done through the second interface of the device for the device above it.

With regard to claim 32, Laborde discloses that the switch elements of each of the plurality are in the first state, and each of a plurality of pods nearly simultaneously receives the signal at the first interface from the telemetry and control module (Column 5, Line 5 to Column 6, Line 48).

With regard to claim 33, Laborde discloses a surface controller 300 coupled to the telemetry and control module, wherein the switch elements of each of the plurality are in the first state, and each of the plurality of the pods nearly simultaneously receives the signal at the first interface from the surface controller (Column 5, Line 5 to Column 6, Line 48).

With regard to claim 34, Laborde discloses switch elements operated by a signal from a telemetry and control module. It would have been obvious to modify Zimmer to

include the surface controller coupled to the telemetry and control module as taught by Laborde in order to control operations of switch elements to bypass devices that have failed. Zimmer discloses a plurality of sensors that measure data and transfer the data to the memory of each of the sensor pods upon receipt of a signal from the telemetry and control device (Column 2, Lines 5-55; Column 7, Line 1 to Column 8, Line 50). It would have been obvious to modify Zimmer to include the signal to operate switches with as taught by Laborde with the signal to measure data in order to measure data with the sensor pods and transfer this data along the devices which have been determined to be in working condition (do not a communication channel failure) so that data is not lost by a failed station.

With regard to claim 56, Zimmer does not disclose that the telemetry and control module commands to manipulate a switch element. Laborde discloses bypass switches in nodes between first and second interfaces (Fig. 4) (Column 4, Line 40 to Column 5, Line 5). Laborde discloses commands from a control module that manipulate the switches (Columns 5-6). It would have been obvious to modify Zimmer to include switches and commands to manipulate switches as taught by Laborde in order to be able to bypass a device whose communication channels have failed so that data can still be transferred to the surface.

Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmer as applied to claim 20 above, and further in view of Baliguet.

With regard to claim 37, Zimmer does not disclose a repeater coupled between any two of the plurality of pods, the repeater designed and arranged to increase the communications range between the two of the plurality. Baliguet discloses that it is known in the art to use repeaters in telemetry systems to increase the distance that signals can travel along a transmission line (Paragraphs [0010-0011]). It would have been obvious to modify Zimmer to include repeaters in between the pods in order to be able to transmit the data from the pods to the surface without losing quality and amplitude of signal along the transmission wire.

Claims 60-66, 68-70, and 72-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmer as applied to claims 20 and 45 above, and further in view of Endo.

With regard to claim 60, Zimmer does not disclose a main controller coupled to the telemetry and control module 10. Zimmer discloses that the telemetry and control module 10 is connected to surface equipment through wire 16, but does not disclose the specifics of the surface equipment. Endo discloses a telemetry and control module 150 connected to a plurality of sensor pods 160 in a borehole similar to the system of Zimmer (Fig. 2). Endo discloses a main controller 100 on the surface to control the system (Column 3, Lines 30-60; Column 4; Column 7 Line 28 to Column 8). It would have been obvious to modify Zimmer to include a surface main controller as taught by Endo in order to be able to synchronize the system to a terminal that can be used by an

operator and to provide a main operations unit which an operator can use to send signals to downhole components of the system.

With regard to claim 61, Zimmer discloses that each of the plurality of sensor pods is characterized by, having a processor 32 designed and arranged to communicate with the telemetry and control module and with other sensor pods and to store an identification (Column 2; Column 4, Lines 1-44; Column 5, Lines 15-27). Zimmer does not disclose that the communication is with a main controller, but instead that it is with the main telemetry and control module. Endo discloses a telemetry and control module 150 connected to a plurality of sensor pods 160 in a borehole similar to the system of Zimmer (Fig. 2). Endo discloses a main controller 100 on the surface to control the system (Column 3, Lines 30-60; Column 4; Column 7 Line 28 to Column 8). It would have been obvious to modify Zimmer to include a surface main controller as taught by Endo in order to be able to synchronize the system to a terminal that can be used by an operator and to provide a main operations unit which an operator can use to send signals to downhole components of the system.

With regard to claim 62, Zimmer discloses that the telemetry and control module is designed and arranged to query each of the plurality of sensor pods, and each of the plurality of sensor pods is designed and arranged to answer a query (Column 4; Column 5, Lines 15-27; Column 6). Zimmer does not disclose that the communication is with a main controller, but instead that it is with the main telemetry and control module. Endo discloses a telemetry and control module 150 connected to a plurality of sensor pods 160 in a borehole similar to the system of Zimmer (Fig. 2). Endo discloses a main

controller 100 on the surface to control the system (Column 3, Lines 30-60; Column 4; Column 7 Line 28 to Column 8). It would have been obvious to modify Zimmer to include a surface main controller as taught by Endo in order to be able to synchronize the system to a terminal that can be used by an operator and to provide a main operations unit which an operator can use to send signals to downhole components of the system.

With regard to claim 63, Zimmer discloses that the telemetry and control module is designed and arranged to harmonize with the plurality of sensor pods to establish a unique identification for each of the plurality of sensor pods, and the telemetry and control module is designed and arranged to register the position in the string of each of the sensor pods relative to the plurality of sensor pods (Column 4, Lines 1-40; Column 5, Lines 15-27; Column 6). Zimmer does not disclose that the communication is with a main controller, but instead that it is with the main telemetry and control module. Endo discloses a telemetry and control module 150 connected to a plurality of sensor pods 160 in a borehole similar to the system of Zimmer (Fig. 2). Endo discloses a main controller 100 on the surface to control the system (Column 3, Lines 30-60; Column 4; Column 7 Line 28 to Column 8). It would have been obvious to modify Zimmer to include a surface main controller as taught by Endo in order to be able to synchronize the system to a terminal that can be used by an operator and to provide a main operations unit which an operator can use to send signals to downhole components of the system.

With regard to claim 64, Zimmer discloses that using a particular identification, the telemetry and control module is designed and arranged to query a specific one of the plurality of sensor pods, and the specific one of the plurality of sensor pods is designed and arranged to answer the telemetry and control module computer (Column 5, Lines 15-27; Column 6). Zimmer does not disclose that the communication is with a main controller, but instead that it is with the main telemetry and control module. Endo discloses a telemetry and control module 150 connected to a plurality of sensor pods 160 in a borehole similar to the system of Zimmer (Fig. 2). Endo discloses a main controller 100 on the surface to control the system (Column 3, Lines 30-60; Column 4; Column 7 Line 28 to Column 8). It would have been obvious to modify Zimmer to include a surface main controller as taught by Endo in order to be able to synchronize the system to a terminal that can be used by an operator and to provide a main operations unit which an operator can use to send signals to downhole components of the system.

With regard to claim 65, Zimmer discloses that the telemetry and control module queries about a status of a sensor (Column 2, Lines 15-26; Column 4). Zimmer discloses that information about each sensor is part of the data, and that the main telemetry unit interrogates the sensor stations 15 for their data. Therefore, the main telemetry and control module queries about the status of the sensors. Zimmer does not disclose that the communication is with a main controller, but instead that it is with the main telemetry and control module. Endo discloses a telemetry and control module 150 connected to a plurality of sensor pods 160 in a borehole similar to the system of

Zimmer (Fig. 2). Endo discloses a main controller 100 on the surface to control the system (Column 3, Lines 30-60; Column 4; Column 7 Line 28 to Column 8). It would have been obvious to modify Zimmer to include a surface main controller as taught by Endo in order to be able to synchronize the system to a terminal that can be used by an operator and to provide a main operations unit which an operator can use to send signals to downhole components of the system.

With regard to claim 66, Zimmer discloses that the telemetry and control module queries about a status of a memory (Column 2, Lines 15-26). Zimmer does not disclose that the communication is with a main controller, but instead that it is with the main telemetry and control module. Endo discloses a telemetry and control module 150 connected to a plurality of sensor pods 160 in a borehole similar to the system of Zimmer (Fig. 2). Endo discloses a main controller 100 on the surface to control the system (Column 3, Lines 30-60; Column 4; Column 7 Line 28 to Column 8). It would have been obvious to modify Zimmer to include a surface main controller as taught by Endo in order to be able to synchronize the system to a terminal that can be used by an operator and to provide a main operations unit which an operator can use to send signals to downhole components of the system.

With regard to claim 68, Zimmer discloses that the telemetry and control module queries about a status of a clamping mechanism (Column 2, Lines 15-55; Column 4; Column 6, Lines 34-62). Zimmer discloses that information about each clamping mechanism is part of the data, and that the main telemetry unit interrogates the sensor stations 15 for their data. Therefore, the main telemetry and control module queries

about the status of the clamping mechanisms. Zimmer does not disclose that the communication is with a main controller, but instead that it is with the main telemetry and control module. Endo discloses a telemetry and control module 150 connected to a plurality of sensor pods 160 in a borehole similar to the system of Zimmer (Fig. 2). Endo discloses a main controller 100 on the surface to control the system (Column 3, Lines 30-60; Column 4; Column 7 Line 28 to Column 8). It would have been obvious to modify Zimmer to include a surface main controller as taught by Endo in order to be able to synchronize the system to a terminal that can be used by an operator and to provide a main operations unit which an operator can use to send signals to downhole components of the system.

With regard to claim 69, Zimmer discloses that using a particular identification, the telemetry and control module commands a function of a specific one of the plurality of sensor pods, and the specific one of the plurality of sensor pods performs the function (Column 2; Column 5, Lines 15-27). Zimmer does not disclose that the communication is with a main controller, but instead that it is with the main telemetry and control module. Endo discloses a telemetry and control module 150 connected to a plurality of sensor pods 160 in a borehole similar to the system of Zimmer (Fig. 2). Endo discloses a main controller 100 on the surface to control the system (Column 3, Lines 30-60; Column 4; Column 7 Line 28 to Column 8). It would have been obvious to modify Zimmer to include a surface main controller as taught by Endo in order to be able to synchronize the system to a terminal that can be used by an operator and to

provide a main operations unit which an operator can use to send signals to downhole components of the system.

With regard to claim 70, Zimmer discloses that the telemetry and control module commands to manipulate a clamping mechanism of a specific one of the pods (Column 2, Column 4; Column 6, Lines 34-62). Zimmer does not disclose that the communication is with a main controller, but instead that it is with the main telemetry and control module. Endo discloses a telemetry and control module 150 connected to a plurality of sensor pods 160 in a borehole similar to the system of Zimmer (Fig. 2). Endo discloses a main controller 100 on the surface to control the system (Column 3, Lines 30-60; Column 4; Column 7 Line 28 to Column 8). It would have been obvious to modify Zimmer to include a surface main controller as taught by Endo in order to be able to synchronize the system to a terminal that can be used by an operator and to provide a main operations unit which an operator can use to send signals to downhole components of the system.

With regard to claim 72, Zimmer discloses that the telemetry and control module sends commands to control a sensor of a specific one of the pods (Column 2, Lines 15-26; Column 4; Column 5, Lines 15-27). Zimmer does not disclose that the communication is with a main controller, but instead that it is with the main telemetry and control module. Endo discloses a telemetry and control module 150 connected to a plurality of sensor pods 160 in a borehole similar to the system of Zimmer (Fig. 2). Endo discloses a main controller 100 on the surface to control the system (Column 3, Lines 30-60; Column 4; Column 7 Line 28 to Column 8). It would have been obvious to

modify Zimmer to include a surface main controller as taught by Endo in order to be able to synchronize the system to a terminal that can be used by an operator and to provide a main operations unit which an operator can use to send signals to downhole components of the system.

With regard to claim 73, Zimmer discloses that the telemetry and control module simultaneously commands each of the plurality of sensor pods to record data (Column 5, Lines 15-27; Column 7, Line 15 to Column 8, Line 15). Zimmer does not disclose that the communication is with a main controller, but instead that it is with the main telemetry and control module. Endo discloses a telemetry and control module 150 connected to a plurality of sensor pods 160 in a borehole similar to the system of Zimmer (Fig. 2). Endo discloses a main controller 100 on the surface to control the system (Column 3, Lines 30-60; Column 4; Column 7 Line 28 to Column 8). It would have been obvious to modify Zimmer to include a surface main controller as taught by Endo in order to be able to synchronize the system to a terminal that can be used by an operator and to provide a main operations unit which an operator can use to send signals to downhole components of the system.

With regard to claim 74, Zimmer discloses that the telemetry and control module nearly simultaneously commands each of the plurality of sensor pods to transmit data (Column 5, Lines 15-27; Column 7, Line 15 to Column 8, Line 15). Zimmer does not disclose that the communication is with a main controller, but instead that it is with the main telemetry and control module. Endo discloses a telemetry and control module 150 connected to a plurality of sensor pods 160 in a borehole similar to the system of

Zimmer (Fig. 2). Endo discloses a main controller 100 on the surface to control the system (Column 3, Lines 30-60; Column 4; Column 7 Line 28 to Column 8). It would have been obvious to modify Zimmer to include a surface main controller as taught by Endo in order to be able to synchronize the system to a terminal that can be used by an operator and to provide a main operations unit which an operator can use to send signals to downhole components of the system.

Claim 71 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmer in view of Endo as applied to claim 69 above, and further in view of Laborde.

With regard to claim 71, Zimmer does not disclose that the telemetry and control module commands to manipulate a switch element. Laborde discloses bypass switches in nodes between first and second interfaces (Fig. 4) (Column 4, Line 40 to Column 5, Line 5). Laborde discloses commands from a control module that manipulate the switches (Columns 5-6). It would have been obvious to modify Zimmer to include switches and commands to manipulate switches as taught by Laborde in order to be able to bypass a device whose communication channels have failed so that data can still be transferred to the surface. Zimmer does not disclose that the communication is with a main controller, but instead that it is with the main telemetry and control module. Endo discloses a telemetry and control module 150 connected to a plurality of sensor pods 160 in a borehole similar to the system of Zimmer (Fig. 2). Endo discloses a main controller 100 on the surface to control the system (Column 3, Lines 30-60; Column 4; Column 7 Line 28 to Column 8). It would have been obvious to modify Zimmer to

include a surface main controller as taught by Endo in order to be able to synchronize the system to a terminal that can be used by an operator and to provide a main operations unit which an operator can use to send signals to downhole components of the system.

Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmer as applied to claim 49 above, and further in view of Tubel (5730219).

With regard to claim 52, Zimmer does not disclose that the telemetry and control module queries about a voltage level. Zimmer discloses that the telemetry and control module communicates with the sensor pods, but does not specify that voltage is enquired about (Column 2, Lines 5-55; Column 5, Lines 15-27; Column 6). Zimmer discloses that the voltage is monitored in borehole telemetry systems (Column 12). It would have been obvious to modify Zimmer to query about the voltage level as taught by Tubel in order to make sure that the signals are transmitted at the appropriate voltages.

Claim 67 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmer in view of Endo as applied to claim 64 above, and further in view of Tubel (5730219).

With regard to claim 71, Zimmer does not disclose that the telemetry and control module queries about a voltage level. Zimmer discloses that the telemetry and control module communicates with the sensor pods, but does not specify that voltage is enquired about (Column 2, Lines 5-55; Column 5, Lines 15-27; Column 6). Zimmer

discloses that the voltage is monitored in borehole telemetry systems (Column 12). It would have been obvious to modify Zimmer to query about the voltage level as taught by Tubel in order to make sure that the signals are transmitted at the appropriate voltages. Zimmer does not disclose that the communication is with a main controller, but instead that it is with the main telemetry and control module. Endo discloses a telemetry and control module 150 connected to a plurality of sensor pods 160 in a borehole similar to the system of Zimmer (Fig. 2). Endo discloses a main controller 100 on the surface to control the system (Column 3, Lines 30-60; Column 4; Column 7 Line 28 to Column 8). It would have been obvious to modify Zimmer to include a surface main controller as taught by Endo in order to be able to synchronize the system to a terminal that can be used by an operator and to provide a main operations unit which an operator can use to send signals to downhole components of the system.

Conclusion

The cited prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A. Hughes whose telephone number is 571-272-6983. The examiner can normally be reached on M-F 9:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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SAH

JACK KEITH
SUPERVISORY PATENT EXAMINER